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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,746	12/07/2001	Jeffrey Tallon	0074-451795	2959

110 7590 04/27/2004

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PHILADELPHIA, PA 19103-2307

EXAMINER

LE, HOA T

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 04/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/010,746		TALLON, JEFFREY	
	<b>Examiner</b>		<b>Art Unit</b>	
	H. T. Le		1773	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5, 16, 18-22, 32, 34-39, 47, 48 and 53-68 is/are allowed.
- 6) ☒ Claim(s) 6-15, 17, 23-31, 33, 40-46 and 49-52 is/are rejected.
- 7) ☒ Claim(s) 50 and 52 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### *Claim Objections*

1. Claims 50 and 52 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 49 limits the organic in the layered inorganic-organic material being a diammonium cation (as the structure  $\text{NH}_3\cdot\text{A}\cdot\text{NH}_3\cdot\text{MmO}_{3m+1}$  as defined at line 2 suggests); however, claim 50 which depends on claim 49 simply recites a general organic/inorganic material. Claim 52 suffers the same deficiency of claim 50.

### *Claim Rejections - 35 USC § 112*

2. Claims 6-15, 17, 23-31, 33, 40-46, and 49-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, it's unclear how the "eclipsed" configuration of the organic layer fits within the "planar structure" of the layered inorganic/organic material as defined in claim 53 on which claim 6 indirectly depends.

In claim 7, "A" is not defined.

In claim 8, "inorganic oxide atomic plane" has no clear antecedent basis.

Claim 9 suffers the same deficiency of claim 7.

Claim 10 is indefinite as "Z" has no antecedent basis.

Claim 11 is indefinite as “the terminal alkane units of A” lacks antecedent basis.

Claims 12-15 are deemed indefinite in view of their dependency upon claim 11.

In claim 17, “A” has no antecedent basis.

In claim 23, it's unclear how the “staggered” configuration of the organic layer fits within the “planar structure” of the layered inorganic/organic material as defined in claim 53 on which claim 23 indirectly depends. If “planar structure” is intended to mean in thickness direction, it is required that “planar structure” be clearly defined in the specification.

In claims 24 and 26, “A” is not defined.

Claims 24-31 are deemed indefinite in view of their dependency upon claim 23.

In claim 33, what is the significance of the parentheses at line 3?

In claim 40, “A-site” has no clear antecedent basis.

Claim 41 is deemed indefinite in view of its dependency upon claim 40.

In claim 42, “A” is not defined.

Claims 43-46 are deemed indefinite in view of its dependency upon claim 40 or 41.

In claim 44, what is the significance of the parentheses at line 3?

Claim 49 is indefinite for the following reasons. (1) Lines 4-5: The phrase “by dissolution of tungstic acid (when the metal is W) or molybdic acid (when the metal is Mo) ammonia solution” appears incomplete; (2) Lines 5-6, it is unclear how reaction of W or Mo metal with hydrogen peroxide yields a nitrogen-containing structure as defined at line 2, as the reactants as specified are void of nitrogen; (3) A is not defined.

Claim 50 is deemed indefinite in view of its dependency upon claim 49.

Claim 51 is indefinite in that it is a method claim, but it recites only product limitations and no method steps. "Attempts to claim a process without setting forth any steps involved in the process generally raises an issue of indefiniteness under 35 U.S.C. 112, second paragraph." See MPEP 2173.05(q).

Claim 52 is deemed indefinite in view of its dependency upon claim 51.

*Allowable Subject Matter*

3. Claims 1-5, 16, 18-22, 32, 34-39, 47, 48, and 53-68 are allowed.
4. The following is a statement of reasons for the indication of allowable subject matter: None of the prior art references of record teach or suggest a layered inorganic-organic material having layers that form inorganic-organic periodic planar structure wherein the inorganic is a metal oxide as claimed. The most pertinent reference is the US Patent No. 6,180,956 to Chondroudis et al which suggests a layered inorganic-organic material having periodic planar structure similar to the claimed material; however, the inorganic is a metal halide, not a metal oxide as claimed.
5. Other references are cited as art of interest.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. T. Le whose telephone number is 571-272-1511. The examiner can normally be reached on 10:00 a.m. to 6:30 p.m., Mondays to Friday.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'H. T. Le', is positioned above the printed name.

H. T. Le  
Primary Examiner  
Art Unit 1773